SANIKIDZE, Sh.Sh. (Tbilisi)

Calcili in the seminal vesicle. Khirurgiia no.9:74 S '54. (MLRA 7:12)
(SEMINAL VESICLES, calculi,)
(CALCULI,
seminal vesicles)

SANIKIDZE, Sh. Sh.

SANIKIDZE, Sh. Sh.: "The clinical aspects and treatment of kidney stones." Georgian State Publishing House for Medical Literature. Tbilisi State Medical Inst. Tbilisi, 1956. (Dissertation for the Degree of Candidate in Medical Sciences).

Source: Knizhnaya letopis' No. 28 1956 Moscow

SANIKIDZE, V.D., mayor med. sluzhby.; BUKH, I.M., podpolkovnik med. sluzhby

Intracranial complications in sinusitis. Voen.-med. zhur. no.11:78-79 N '56. (MIRA 12:1)

(NOSE, ACCESSORY SINUSES OF--DISEASES)

SANIKIDZE, V.D.

Clinical aspects of neuroses in liambliasis. Azerb.med.zhur. no.7 84-87 Jl '58 (MIRA 11:8)
(NERVOUS SYSTEM--DISEASES)
(GIARDIASIS)

SANIKIDZE, V. I.

"A Method of Selecting Tea Clusters According to Morphological and Chemical Characteristics." Cand Agr Sci, Georgian Agricultural Inst, Tbilisi, 1953. (RZhBiol, No 6, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

SANIKIDZE, V. K.

36715. ((Electricheskiy Variator)) (Konstraktsii Avtora) i Yego Primeneniye V Metallorezhith Stankakh Dlya Polucheniya Optimal'nykh Skorostey Rezaniya. Sbornik Trudov Tbilis. In-Ta Inzhenerob Zh-D Transporta Im. Lenina, XVII-XVIII, 1948 s 613-17.

SO: Letopis' Zhurnal'nykh Statey Vol. 50, Moskva, 1949

KERESELIDZE, Sh.Ya., kandidat tekhnicheskikh nauk; KHUKHUNI, T.V., inzhener; SANIKIDZE, V.K., inzhener.

Mountain tractor. Sel'khozmashina no.2:15-19 F '54. (MLRA 7:2)
(Tractors)

SANIKIDZE, V. K.

SANIKIDZE, V. K. -- "The Problem of Automatic Stabilization of the Vertical Position of Self-Propelled Mine Machines," Min Higher Education USSR, Georgian Polytechnic Inst imeni S. M. Kirov. Tbilisi, 1955.
(Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya Letopis', No 9, 1956

SOV/124-58-2-1595

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 16 (USSR)

AUTHOR: Sanikidze, V. K.

TITLE: On the Problem of Automatic Vertical Stabilization of Self-propelled Mining Excavators (K voprosu avtomaticheskoy stabilizatsii vertikal'nogo polozheniya gornykh samokhodnykh mashin)

PERIODICAL: Sb. tr. Tbilissk. in-ta, inzh. zh.-d. transp., 1956, Nr 30, pp 183-198

ABSTRACT: The article describes the dynamics of self-propelling excavators designed for open-cut mining operation on steep hills. It recommends a system of stabilization in the vertical plane which consists of a responding spring and a reversing stabilizer. The article gives an erroneous conclusion that the selection of the angular coefficient characterizing the elastic link should depend on the condition of tangency to the curve showing the variation of the propping-up moment as a function of the slope angle; a stiffer spring characteristic is required in order to secure the stability of operation at the point of equilibrium. The condition of equilibrium itself permits one to determine only the force required from the elastic link, but not

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SOV/124-58-2-1595

On the Problem of Automatic Vertical Stabilization of Self-propelled (cont.)

the link stiffness.

A. A. Pervozvanskiy.

Card 2/2

SANIKIDZE, V.K., inzhener.

Automatic stabilization of the vertical position in a self-propelled vehicle used on steep slopes. Sel'khozmashina no.2:1-5 F '57.
(Tractors) (MLRA 10:4)

OSTRIKO[illegible], M.S.; SANILOVA, Ye.P.

Influence of electrolytes on capillary contraction forces effective during the drying of montmorillonite. Uch.zap.RGU no.60:37-49 '59. (MIRA 14:10)

(Capillarity)

SANIN, A A

N/5
613. 64
.S2

Radiotekhnicheskiye metody issledovaniya izlucheniy (Radiotechnological Methods of Radiation Examination) pod. red. M. S. Kozodayev. Moskva, Gostekhizdat, 1951.

388 p. diagrs.

USSR/Electronics - X-Ray Tube Jul 51

"Oscillographic Study of Discharge in Pulse X-Ray Tubes," E. M. Reykhrudel, A. A. Sanin, T. A. Klitova, Chair of Electron Optics and Oscillography, Moscow State U

"Zhur Tekh Fiz" Vol XXI, No 7, pp 746-752

Pulse oscillograph with delayed sweep and recording speed of 40 km/sec, built by authors, was used to study pulse X-ray cold-cathode tube operating at 100 - 300 kv. Oscillograms showed oscillation at frequency ~10^7 cycles and region of slow current

1/2 189T41

USSR/Electronics - X-Ray Tube (Contd) Jul 51

rise. Effects of gas within tube and of parameters of circuit scheme are demonstrated.

Authors were assisted by student A. V. Kustova. Submitted 25 Jun 50.

2/2 189T41

USSR/Physics - X-Ray Tube Anode Heating 11 Sep 51

"Heat Regime of the Anode of Powerful Impulse Tubes," T. A. Sanina, A. A. Sanin, A. M. Titov

"Dok Ak Nauk SSSR" Vol LXXX, No 2, pp 209-211

Problem concerning the heat balance of the anode for the stationary case was studied by many, especially by V. Rakov and A. Bliznyuk (cf. "Zhur Tekh Fiz" 10, 11 1940). Similar problem for the nonstationary case was solved by G. A. Grinberg, N. N. Lebedev, E. D. Pergamentseva, I. P. Skal'skaya and Ya. S. Uflyand (cf. "Zhur Tekh Fiz" 20, 12, 1950), for rather large intervals (1 sec) of exposure. Authors study the case

221T88

for very small exposure times (10^{-6} to 10^{-7} sec) and 100-1,000 amp. Set up the eqs of heat conduction in wolfram target and analyze temp behavior. Submitted by Acad D. V. Skobel'tsyn 17 Jul 51.

221T88

SANIN, A. A.

SANIN, A.A.

USSR

180. On the problem of the temperature of an object ... corpuscular radiation flux. I. A. Sanina, A. A. [illegible] and A. M. Trrov. Zh. Eksper. Teor. Fiz. IX (12) 393 (1955). In Russian.

The problem is considered for ... corpuscular ... The assumption that the flow of electrons ... only on the surface of ... [illegible]

DMITRIYEV, V.A.; SANIN, A.A.

Laboratory impulse oscillograph. Vest.Mosk.un. 8 no.6:95-102 Je '53.
(MLRA 6:10)

1. Fizicheskiy fakul'tet. (Oscillograph)

SANIN, A.A.; SUKHANOVA, N.N.

Differential amplitude analyzers for impulses with low resolving power. Vest. Mosk.un. 8 no.8:105-108 Ag '53. (MLRA 6:11)

1. Fizicheskiy fakul'tet. (Electric measurements)

SANIN, A.

Teletheater. Tekh.mol.22 no.4:34 Ap '54. (MLRA 7:4)
(Television broadcasting of films)

USSR/ Physics - Amplitude analyzers

Card 1/1 Pub. 118 - 5/6

Authors : Sanin, A. A.

Title : Amplitude analyzers for voltage impulses

Periodical : Usp. fiz. nauk 54/4, 618-642, Dec 1954

Abstract : Various types of voltage-impulse amplitude-analyzers, their advantages and disadvantages, are described. These analyzers make it possible to record the amplitude spectrum of voltage impluses produced by a transmitting (sensing) device, e.g., scintillation or proportional counter and ionization chamber. The basic characteristics of such an analyzer, are listed. Circuit diagrams and mode of operation of amplitude analyzers are given. Seventeen references: 4 USSR and 13 USA (1943-1959). Diagrams; drawing.

Institution: .....

Submitted: .....

SANIN, A.A.; MELIORANSKIY, A.S.; LOTOVA, N.A.

Voltage pulse amplitude analizer with brief resolving time. Vest. Mosk. un.10 no.12:87-92 D '55. (MLRA 9:5)
(Pulse techniques (Electronics))

SANIN, A. A.

INSTRUMENTATION: COUNTERS IN GENERAL

"Increasing the Service Life of Self-Quenching Counters By Means of Radio-Engineering Methods", by A.A. Sanin, Ya.L. Blokh, and M.M. Dubrovin, Second Scientific Research Physics Institute, Moscow State University imeni M.V. Lomonosov, Pribory i Tekhnika Eksperimenta, No 1, January-February 1957, pp 58-59.

Analysis of a device for the quenching of a discharge in Geiger-Müller counters, connected in parallel in groups of 10-12. The circuit ensures a small dropping time in the voltage of the output signal (approximately 0.1 microsecond). The use of a quenching device makes it possible to increase the service life of the counters by a factor of five. Refers to work by H. Elliot (Proceedings Physical Society, 1949, A62, 1, 354).

Card 1/1

SANIN, A.A.

AUTHOR: Sanin, A. A., and Dmitriyeva, N. N. 120-2-28/37

TITLE: An Instrument for Measurement of Photo-multiplier Parameters. (Pribor dlya Izmereniya Parametrov Fotoumnozhiteley.)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.2, pp. 103 - 105 (USSR)

ABSTRACT: One of the most important characteristics of scintillation spectrometers, i.e. their ability for energy discrimination, depends on the parameters of the photo multiplier, of the crystal, and on the construction of the instrument. The basic factor, the dispersion of the spectral line, is introduced by the photo-multiplier. Various authors (Ref. 1 - 4) have investigated the basic parameters of photo-multipliers. In the present article the authors give the description of an instrument which can be used to determine the sensitivity of the photocathode at various points, and the resolving characteristics of the photo-multiplier when either the whole surface of the cathode or any point on it is used. The block diagram is given in Figure 1. The source of light is a luminescent point on a low persistance CRT screen Ref. 5. The CRT is modulated by rectangular pulses. (0.5 μsec.) from generator 2. The CRT and the photo-multiplier are 15 cms apart and the signal from the photo-multiplier is applied

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An Instrument for Measurement of Photo-multiplier Parameters.

through a cathode follower to a differential discriminator. The differential discriminator consists of the amplifier 5, two threshold systems 6 and 7 and anti-coincidence systems 8. The output from the anticoincidence system is applied to a ratemeter. The instrument may be recommended for use in mass control of photo-multipliers in a factory. The block diagram of the arrangement, the circuit diagram of the electronic part of it and two photographs of the oscillograms of the sensitivity at various points of the photo-cathode and one photograph of the oscillogram, characterising the evaluation of the CRT luminosity, are given. A. V. Smirnov co-operated in the construction of the instrument. There are 5 references, 1 of which is Slavic.

SUBMITTED: September, 22, 1956.

ASSOCIATION: Second Scientific and Research Institute of Physics of the Moscow State University. (2-y Nauchno-Issledovatel'skiy Fizicheskiy Institut MGU.)

AVAIIABLE: Library of Congress.

SOV-120-58-1-27/43

AUTHORS: Sanina, T. A., Sanin, A. A., Fedorenkova, N. R.

TITLE: The Triggering of Gas Discharge Devices (Zazhiganiye gazorazryadnykh priborov)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 116-119 (USSR)

ABSTRACT: An investigation is made of the dependence of discharge delay on a number of factors such as overvoltage, the magnitude of the starting current, frequency of repeat discharges, etc. The following were studied: MN-3, MN-5, MN-6, MTKh-90. A special generator of rectangular pulses which delivers pulses whose duration is 5 - 200 μ/sec was used. The amplitude of these pulses was within the range 0 - 200 V and the repetition frequency from a few 10ths of c/s to 10 Kc/s. The circuit used to apply the pulses to the gas discharge tube is shown in Fig.1. The pulses are delivered to the tube through the capacitor C and then to a parallel circuit one arm of which consists of the gas discharge tube in series with a resistance R_1 while the other arm contains a resistance R_2 . Fig.2 shows current pulses through the

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The Triggering of Gas Discharge Devices.

valve taken across the resistance R_1 for different frequencies of the potential applied to the tube. At lower frequencies the current pulses take longer to develop. As can be seen from this figure, the time taken for the discharge to develop at constant frequency is constant from pulse to pulse, and only after a certain interval of time a statistical scatter sets in (Curve 4). Thus the initial electron current decreases with time and finally becomes sufficiently small so that the statistical delay becomes commensurable with the time taken by the discharge to develop. Fig.3 shows the delay in the discharge of a neon valve (MN-5) as a function of the repetition frequency of the applied potential and the amplitude of this potential. Fig.3 shows that the mean statistical delay time depends more strongly on the frequency of a repeat discharge than on the time of formation of the discharge. Fig.4 shows the delay time of the discharge on the voltage across the valve. The form of this curve can be represented by a curve of the form:

$$\tau = \frac{a}{V - V_3} \exp(- b/V)$$

Card 2/4 in which a and b are constants independent of the voltage

The Triggering of Gas Discharge Devices.

V and V_3 is the voltage at which spark-over occurs. Fig. 5 shows the effect of a constant potential on the time of formation of the discharge as a function of the interval of time between discharges. The continuous curve was taken with zero voltage between discharges while the dotted curve was taken with a DC voltage of 10 volts between the discharges. It is clear that the DC voltage has an effect on the time of formation of the discharge but only for very small intervals between discharges. Finally, the concentration of ions as a function time was determined. This was done by the method suggested by Dandurand (Ref.3). It was found that the electron concentration depends linearly

SOV-120-58-1-27/43

The Triggering of Gas Discharge Devices.

on time. There are 7 figures, 1 Soviet, 1 German and 1 English reference.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU, Moskovskiy aviatsionnyy institut (Scientific Research Institute for Nuclear Physics of the Moscow State University, Moscow Aviation Institute)

SUBMITTED: June 25, 1957.

1. Gas discharges--Equipment 2. Gas discharges--Control systems
3. Gas discharges--Electrical factors

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05475
SOV/120-59-3-46/46

AUTHORS: A. A. Sanin, Yang Yen-ming, Chang Chih-shang, Wang Ching-chin, Hsia Sung-chiang, Tai Kuei-liang, and Chiang Fu

TITLE: An Amplitude Analyser with a Short Resolving Time (Amplitudnyy analizator s malym razreshayushchim vremenem)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3, p 156 (USSR)

ABSTRACT: A few [redacted] details are given of a ferrite analyser with a resolving time of 20 μsec. No circuits or details of the components are given.

SUBMITTED: February 13, 1959

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SOV/120-59-4-50/50

AUTHOR: Sanin, A.A.

TITLE: IV-th Scientific and Technological Conference on Nuclear Electronics (A Review of Papers)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 161-163 (USSR)

ABSTRACT: The conference took place on April 20-25, 1959 in Moscow. About 1000 persons participated and more than 100 papers were read. In the hall of the conference building an exhibition of electronic apparatus was organized, including new multi-channel amplitude and time analyzers, single-channel discriminators, various counters, photoelectric multipliers, scintillators, etc. Most of the apparatus exhibited was presented by the Institute of Atomic Energy. The conference worked in the following sections: nuclear detectors, amplitude and time analyzers, automatization of measurements and processing of results, pulse apparatus, amplifiers, dc voltage and current stabilizers. In the nuclear detector section (Chairman, V. K. Voytovetskiy) most of the papers were concerned with scintillation methods. It was pointed out that Soviet industry does not produce very good quality photomultipliers at a sufficiently fast rate. A special commission was set up to standardize photomultiplier parameters. A very

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IV-th Scientific and Technological Conference on Nuclear Electronics (A Review of Papers)

exhaustive study of plastic scintillators was reported by Baroni et al (Physics Institute of the Academy of Sciences, Georgian SSR). N. D. Galanina read an interesting paper on a solid xenon scintillation counter. Grushina et al (Physical Institute, Academy of Sciences, USSR) described a Cherenkov γ-spectrometer. Afanas'yev et al described a Cherenkov counter for the detection of fast electrons. Other papers were concerned with low voltage halogen counters, optimum conditions for semiconducting counters, neutron detection by electrets, etc. The section concerned with amplitude and time analyzers was chaired by I. V. Shtranikh and L. A. Matalin-Slutskiy. Various types of analyzers were described, including a 16 000 channel analyzer which is being designed by A. M. Shimanskiy et al. A few papers were concerned with nanosecond analyzers (A. A. Kurashev, A. F.

IV-th Scientific and Technological Conference on Nuclear Electronics (A Review of Papers)

Linev and others). It was pointed out that there is an absence of nanosecond oscillators, oscillographs, etc. The section on the automatization of measurements and processing of results was chaired by B. N. Moiseyev. Most of the papers were concerned with various designs of print-out devices working in conjunction with time analyzers. The pulse apparatus section (Chairman, A. A. Sanin) considered methods of amplification and production of signals and associated apparatus. Ye. I. Agisheva et al reported a new method of using a single amplification channel for two detectors such that the ratio of the pulse amplitudes is practically independent of changes in the voltage supplies. V. M. Levin reported on new oscillographs now being prepared for mass production. These oscillographs have the following characteristics: UO-1-M - bandwidth 0-25 Mc/sec (0.025-10 μsec/cm), DEO-1 - bandwidth 0-20 Mc/sec (0.05 μsec/cm - 2.5 sec/cm), ISO-1 - bandwidth 5 Kc/sec-200 Mc/sec (2.5 nanosec/cm-20 μsec/cm). A. A. Tyul'nikov reported on nanosecond oscillators: GKI-1 (minimum pulse length 10 nanosec), GKI-5 (5 nanosec) and GKI-4 (1 nanosec). I.Ya.Breydo

IV-th Scientific and Technological Conference on Nuclear Electronics (A Review of Papers)

reported on new types of Soviet decatrons (up to 20 000 pulses/sec). The section on amplifiers and stabilizers was chaired by K. E. Erglis. A. A. Sanin et al reported on detector supplies stabilized to ± 0.01%. The Chairman of the Organizing Committee, A. A. Markov, concluded the conference by pointing out the importance of developing new apparatus for the nanosecond region.

USCOMM-DC-61,818

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9,2510

S/120/60/000/02/020/052

E192/E382

AUTHORS: Sanin, A.A., Chzhan Van'-Chzhu, Tszyuy Tszyan-Shi

TITLE: A Highly-stable Non-overloading Amplifier[29]

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 2, pp 76 - 79 (USSR)

ABSTRACT: The instrument consists of an input stage, an amplifier, a discriminator, a control circuit and a stabilized power supply. A detailed circuit diagram of the input stage and the amplifier is shown on p 77. The input stage is in the form of the White cathode follower. This unit is usually situated in the vicinity of a radiation detector and it is connected to the amplifier by means of a high-frequency cable. The amplifier consists of an inverter, an attenuator and three amplification stages. Altogether it employs 8 tube envelopes. The inverter is based on a differential amplifier so that depending on the polarity of the input signal, the divider network is connected either by one or the other anode of the inverter tube. The gain of the amplifier can be adjusted by the switch K_2. If it is necessary to extend the gain-control range of the amplifier, it is possible to

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A Highly-stable Non-overloading Amplifier

switch off the first amplification stage. The signal to be amplified can be shaped by means of an artificial line connected to the input of the differential amplifying stage or by means of an RC network connected between the first and second amplification stages. The choice of the time constant has a significant effect on the overlaod characteristic of the amplifier. Thus, at RC = 0.2 μs and the interval between the input signals of 7 μs, the overload coefficient is 600, while at RC = 20 μs and signal spacing of 50 μs, the overload coefficient is about 60. The circuits of the first two stages of the amplifier are identical. They are designed for the amplification of negative pulses. However, even if a positive pulse having an amplitude of less than 10 V is applied, no grid currents are produced in these stages. Positive and negative feedback paths are included in these stages so that it is possible to obtain a gain of more than 30 with $\beta k = 40$. The circuit of the output stage differs considerably from that of the preceding stages. The input of this stage is preceded by a differential

A Highly-stable Non-overloading Amplifier

amplifier whose output signal is applied to the grid of the penultimate tube. The pulse applied to the grid of the differential amplifier is of negative polarity and any overshoots produced by this signal are cut off by means of a crystal diode connected to the anode of the tube. The last circuit of the output stage is a cathode follower whose output signal is applied to a portion of the anode load of the preceding tube by means of the capacitance C_1. By this method it is possible to widen the linear amplification range of the output stage. The amplifier has a gain of 2×10^4 and its rise time is 0.25 μs. The maximum amplitude of the output signal is about 100 V and the overall linearity of the system $\pm$ 0.1%; the long-term stability of the system is $\pm$ 0.1% and the overload coefficient is greater than 600 if the time constant of the forming network is 0.2 μs.

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A Highly-stable Non-overloading Amplifier

There are 1 figure and 6 references, 3 of which are Soviet and 3 English.

ASSOCIATION: Pekinskiy politekhnicheskiy institut (Peking Polytechnical Institute)

SUBMITTED: February 13, 1959

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82890

9,2540

S/120/60/000/02/021/052
E192/E382

AUTHORS: Sanin, A.A. and Sergeyev, S.A.

TITLE: Application of Positive Feedback in Stabilized Power Supplies

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 2, pp 80 - 82 (USSR)

ABSTRACT: A voltage stabilizer suitable for supplying various types of radiation detectors[19] is shown in Figure 1. The principal feature of this device is that it is provided with considerable positive feedback. By this means it was possible to obtain the stabilization coefficient $k_c > 10^4$. The device gives an output current of 5 mA at 1 kV. The drift of the output voltage over 8 hours is less than $\pm$ 0.01%. When the heater voltage is changed by 10% the output voltage varies by less than 5×10^{-3} %. The output impedance of this system is less than 10 Ω. Although the circuit of Figure 1 was principally designed for a constant output voltage, it is possible to vary this voltage by changing the resistances R_1, R_4 and R_5. The source of the

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Application of Positive Feedback in Stabilized Power Supplies

reference voltage is provided by a corona stabilizer type SG-7S (refs 4, 5). Such a reference tube has a temperature coefficient of $\pm$ 0.014 %/°C over the temperature range from 20 to 30 °C. In the circuit of Figure 1, the temperature coefficient was compensated in the following manner. The resistor R_2 of the divider network is in the form of a coil wound on the corona stabilizer. The coil is made of copper wire so that it has a large temperature coefficient. The former of this coil is made of brass. The temperatures of the corona stabilizer and the coil are identical. The value of the coil resistance is chosen in such a way that the change of the maintaining voltage of the corona stabilizer and the change of the voltage drop on the resistors R_2 and R_3, caused by the temperature change, are identical. These changes are applied to the inputs of the differential amplifier and so the voltage at the output of the stabilizer should be constant even if the temperature of the corona tube is changing. The amount of the positive

Application of Positive Feedback in Stabilized Power Supplies

feedback in the circuit is varied by the resistance R_7 . A similar stabilizer for the output voltage of 280 - 300 V is shown in Figure 3. The output impedance in this device is less than 1 Ω and its maximum output current is 200 mA. The output voltage is varied by the potentiometer R_3 . A graph showing the dependence of the output voltage of this stabilizer on the input voltage is given in Figure 4. Curve A corresponds to a stabilizer without positive feedback, while Curve Б is for the stabilizer of Figure 3. There are 4 figures and 7 references, 3 of which are English and 4 Soviet; one of the Soviet references is translated from English.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific-Research Institute for Nuclear Physics of Moscow State University)

SUBMITTED: February 13, 1959

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SANIN, A.A.; YAN YAN'-MIN' [Yang Yen-min]; DZHAN DZHI-SHAN; SYU TIN-BAU [Hsiu T'ing-pai]; VAN TSZIN-TSZIN' [Wang Ching-chin]; SYA SUN-TSZYAN [Hsia Sung-chiang]; DAY GUY-LYAN [Tai Kuei-liang]; TSZEN FU [Tsêng Fu]

100-Channel voltage pulse height analyzer with a short resolving time. Prib. i tekh. eksp. no.3:63-67 My-Je '60. (MIRA 14:10)
(Pulse height analyzers)

SANIN, A.A. Prinimala uchastiye TITOVA, T.A., aspirantka; KOZODAYEV, M.S., red.; SERDYUKOV, A.R., red.; SHCHUKIN, Ye.D., red.; MURASHOVA, N.Ya., tekhn. red.

[Radio engineering methods for studying radiation] Radiotekhnicheskie metody issledovaniia izluchenii. Pod red. M.S.Kozodaeva. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1951. 388 p. (MIRA 15:1)

1. Moskovskiy Gosudarstvennyy universitet (for Titova).
(Amplifiers (Electronics)) (Pulse techniques (Electronics))

PHASE I BOOK EXPLOITATION SOV/5913

Sanin, Aleksey Aleksandrovich

Elektronnyye pribory yadernoy fiziki (Electronic Instruments in Nuclear Physics) Moscow, Fizmatgiz, 1961. 615 p. 13,150 copies printed.

Ed.: A. I. Kostiyenko; Tech. Ed.: V. N. Kryuchkova.

PURPOSE: This book is intended for a general audience of experimental physicists, advanced students, and teachers who lack specialized training in electronics. It may also be useful to engineers and technicians working in the field of the peaceful uses of atomic energy.

COVERAGE: The book deals with the electronic instruments most widely used in nuclear physics. It includes a considerable number of actual circuit diagrams and gives the methods by which they were calculated. At the end of the book there is a section devoted to reference data on a number of Soviet-manufactured electronic instruments, components, and tubes. The book is partly based on a series of lectures given by the author at Moscow State University over a period of many years, and partly on the

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course of lectures for teachers given at Peking University. The author thanks I. V. Stranikh, I. D. Murin, and V. Godzhokov. There are 414 references: 109 Soviet, 285 English, 7 German, 9 Italian, 1 Czech, and 3 French. The references are arranged by chapters at the end of the book.

TABLE OF CONTENTS [Abridged]:

21613
S/188/61/000/002/008/010
B108/B209

9.3150 (1049, 1140, 1532)

AUTHORS: Sanina, T. A., Zaytsev, A. A., Sanin, A. A.

TITLE: A study of the development of a discharge and determination of the plasma parameters in low-pressure tubes

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, no. 2, 1961, 54-59

TEXT: The authors of the present paper studied the formation of various regions in a gaseous-discharge tube by way of optical observation. The probe method, which usually is employed, is a little too insensitive in the transition process from ignition to normal operation. The experimental setup is shown in Figs. 1 and 2. The discharge tube was fed with up to +700 v from a high-voltage rectifier, and by rectangular pulses of a length of between 0.5 and 60 μsec and a frequency of 50-100 cps. The intensity variation was studied by means of a ФЭУ-19 (FEU-19) multiplier. An optical system was placed before the photomultiplier and both were movable along the discharge tube. After amplification, the signal from the multiplier was fed into a cathode-ray tube. The discharge tube was ignited through a high-impedance

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A study of ...

Γ-807 (G-807) tetrode as soon as a pulse reached the latter. The authors examined tubes with oxide cathodes, 30-70 cm long, 2 and 4 cm in diameter, filled with pure neon of 0.8 mm Hg and a neon-mercury mixture of 1 mm Hg. Fig. 6 shows the development of the intensity distribution along a neon tube. Curve 1 was taken 2.5 μsec after ignition; for curve 2, t = 3 μsec; curve 3, t = 4 μsec, [Abstracter's note: t for curve 4 is omitted], curve 5, t = 8 μsec (normal conditions). The authors found a maximum of radiative intensity, due to higher electron mean energy, which appears soon after applying the electric tension. Faraday's dark space and the anode fall can be seen to develop gradually. There are 6 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: НИИЯФ, МАИ (Scientific Research Institute of Nuclear Physics)

SUBMITTED: October 16, 1960

A study of ...

Legend to Fig. 1: 1) Generator of rectangular pulses, 2) slave sweep, 3) amplifier, 4) high-voltage supply, 5) test tube, 6) FEU, 7) cathode stage, 8) FEU amplifier, 9) cathode-ray tube.

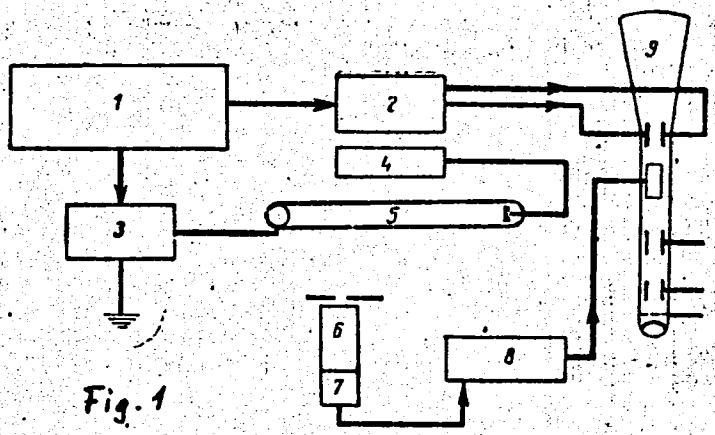

Fig. 1

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A study of ...

Legend to Fig. 2: Connection of the discharge tube. a) current i, b) voltage, E, c) from generator.

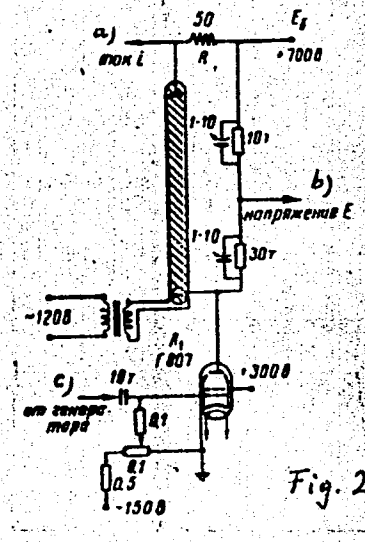

Fig. 2

Card 4/5

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A study of ...

Legend to Fig. 6: Distribution of radiative intensity I along the tube.

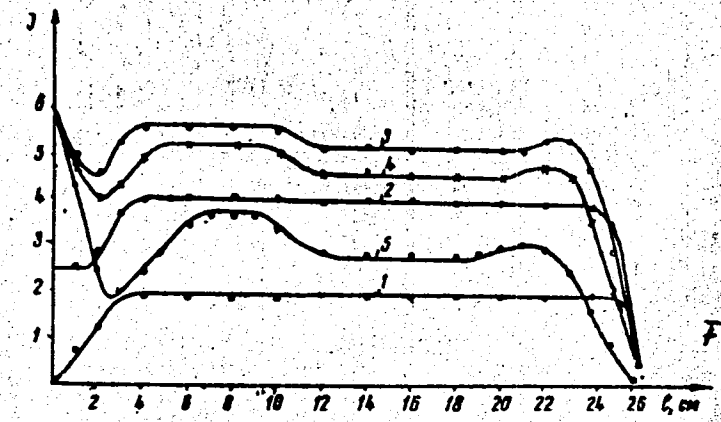

Fig. 6

Card 5/5

SANIN, A.A.; DMITRIYEVA, N.N.

Analysis of the work of Rossi-type coincidence circuits.
Prib. i tekh.eksp. 6 no.4:61-64 Jl-Ag '61. (MIRA 14:9)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Electronic circuits)

KOLOTOV, O.S.; SANIN, A.A.; SHIL'BERSKIY, Z.

Device for the adjustment of a pulse equipment in the millimicrosecond range. Prib.i tekh.eksp. 6 no.5:82-86 S-O '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Pulse techniques (Electronics))

SANINA, T.A.; ZAYTSEV, A.A.; SANIN, A.A.

Investigating the development of discharges and establishing the parameters of plasma in low-pressure tubes. Vest. Mosk. un. Ser. 3 Fiz., astron 16 no.2:54-59 Mr-Ap '61. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki i Moskovskiy aviatsionnyy institut.
(Electric discharges through gases)
(Plasma (Ionized gases)).

L 8373-65 EWT(1)/EWA(h) AFETR/ASD(a)-5/ESD(t)/ESD(t)

ACCESSION NR: AR4044025 U/0058/63/000/011/A029/A029

SOURCE: Ref. zh. Fizika, Abs. 11A299

AUTHOR: Kolotov, O. S.; Sanin, A. A.

TITLE: Nanosecond range amplifiers with pulse feed

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektronike, 1961. M., Gostatomizdat, 1962, 44-49

TOPIC TAGS: amplifier, naosecond range amplifier, multistage amplifier, pulse feed

TRANSLATION: There is shown the possiblity of designing multi-stage amplifiers with pulse feed on the cathode and control grids. To separate the signal to be amplified and the "pedestal" that occurs on feeding of the control pulse, as the anode load is used a short-circuited piece of cable with an appropriate matching resistor. There was developed a circuit for a four-stage amplifier with an amplification factor of 2000 and a build-up front of 3.5 nsec; this circuit uses this method of separating the "pedestal" and the useful signal. The first three stages use

Card 1/2

L 8373-65

ACCESSION NR: AR4044025

6Zh22P tubes with a suppressor grid. When a positive 100-volt pulse is fed to the suppressor grid of these tubes the transconductance of their grid characteristic reaches 80 ma/v. Feed pulses are shaped by a thyratron generator and are fed through cathode followers to the amplifier circuit. The output stage of the amplifier utilizes a 6V1P tube. This tube is put into an overload regime by the circuit of the control grid. In this case the transconductance of the grid characteristic increases to 125 ma/v. The amplifier is used in a circuit of the transient characteristic meter to align the high-speed measurement apparatus.

SUB CODE: EC ENCL: 00

Card 2/2

S/120/62/000/005/033/036
E192/E382

AUTHORS: Kolotov, O.S. and Sanin, A.A.

TITLE: A time-amplitude converter circuit

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962, 181 - 182

TEXT: The simple circuit described is based on a single secondary-emission tube (Fig. 1). Normally, the tube is cut-off by the negative voltage applied to its control grid. When a negative pulse with an amplitude of 7-10 V is applied to the cathode of the tube through a coaxial cable, the tube is open and a regenerative action takes place in it due to the positive feedback through C_1. After triggering the tube a constant current flows through it and the voltage across the capacitance C_2 connected into the dynode circuit rises linearly. The rate of rise of this voltage depends on the magnitude of C_2 and the current flowing to the dynode. If the dynode voltage is comparatively low, its current is practically constant. A negative pulse is applied to the input 2 after a time interval

τ_1 ; this triggers the tube again and the circuit returns to its original state. If the pulse to the input 2 is applied prior to that of input 1 , the tube is closed and there is no output signal. In this case, if the signal is applied only to the input 1 , a maximum amplitude pulse is produced at the output. The time during which the tube is open in the absence of the signal 2 depends on the capacitance C_3 and the magnitude of the grid currents. The amplitude of the output signal taken from C_2 is linearly dependent on the measured time interval.

There are 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific-research Institute of Nuclear Physics of MGU)

SUBMITTED: January 22, 1962

EWT(m)/BDS--AFFTC/ASD
L 10363-63
ACCESSION NR: AP3002723 S/0120/63/000/003/0079/0081

54
57

AUTHOR: Sanin, A. A.; Mineyev, Yu. V.

TITLE: An electronic circuit for separating signals which differ in shape

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1963, 79-81

TOPIC TAGS: transistorized circuit, signal separation, Gamma-quanta recording, photomultiplier, fast components, slow components

ABSTRACT: This article describes a transistorized circuit (see Fig. 1 of Enclosure) which can distinguish pulses by shape and is capable of separate registering of both Gamma quanta and charged particles with the use of a single scintillation counter. The device operates basically as follows. A negative-polarity signal from a photomultiplier is applied to an emitter follower for separating "fast" components from "slow" ones. If the input signal contains a fast-component amplitude, then a pulse with an amplitude sufficient for triggering a discriminator will be developed at the secondary winding of the transformer of the second-transistor collector circuit. This signal is transmitted through an emitter follower to the input of a fast-component discriminator, i.e., a blocking

Card 1/2

L 10363-63
ACCESSION NR: AP3002723

3

oscillator with collector-base coupling. The circuit of the latter has a small discriminator threshold drift (2%) at temperatures from -10 to +50C. A signal from the emitter of the second stage passes to the slow-component discriminator through a delay line and emitter follower. The discriminator operates when the input signal amplitude is greater than the preset threshold value and the fast discriminator is not actuated. The slow-component discriminator is followed by an anticoincidence circuit. During the registration of Gamma quanta, signals do not appear at input "a" of the anticoincidence circuit. In this case, a pulse will appear at the output of the anticoincidence circuit, depending on the energy of the Gamma quantum and on the preset discriminator threshold. The total power required for the circuit does not exceed 0.25 w. "The authors thank P. I. Shavrin and V. E. Nesterov for their constant interest in the project and for their many valuable observations." Orig. art. has: 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute for Nuclear Physics MGU)

SUBMITTED: 10Jul62 DATE ACQ: 12Jul63 ENCL: 01

SUB CODE: 00 NO REF SOV: 000 OTHER: 003

Card 2/2

SANINA, T.A.; SANIN, A.A.

Establishment of the radial distribution of electron concentration in a positive gas-discharge column. Vest. Mosk. un. Ser. 3: Fiz., astron. 18 no.2:43-46 Mr-Ap '63. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta i Moskovskiy aviatsionnyy ordena Lenina institut im. Ordzhonikidze.
(Electric discharges through gases)
(Electrons)

L 3016-66 EWT(m) DIAAP

AM5004021 BOOK EXPLOITATION UR/
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Sanin, Aleksey Aleksandrovich

Electronic instruments for nuclear physics (Elektronnyye pribory yadernoy fiziki) 2d ed. Moscow, Izd-vo "Nauka", 1964. 623 p. illus., biblio., tables. 9,000 copies printed.

TOPIC TAGS: electronic equipment, electronic amplifier, electronic component, nuclear physics apparatus, electron tube, electronic circuit

PURPOSE AND COVERAGE: The book deals with different electronic instruments which are most extensively used in nuclear physics. Diagrams and methods for their designing are presented. Information and data on some electronic instruments, parts and tubes manufactured in the USSR are included. The book is intended for a wide range of experimenter physicists, for students in advanced courses and for lecturers who don't have a special preparation in electronics. It can be used also by engineers and technicians working in the field of peaceful use of atomic energy.

Card 1/3

L 3016-66
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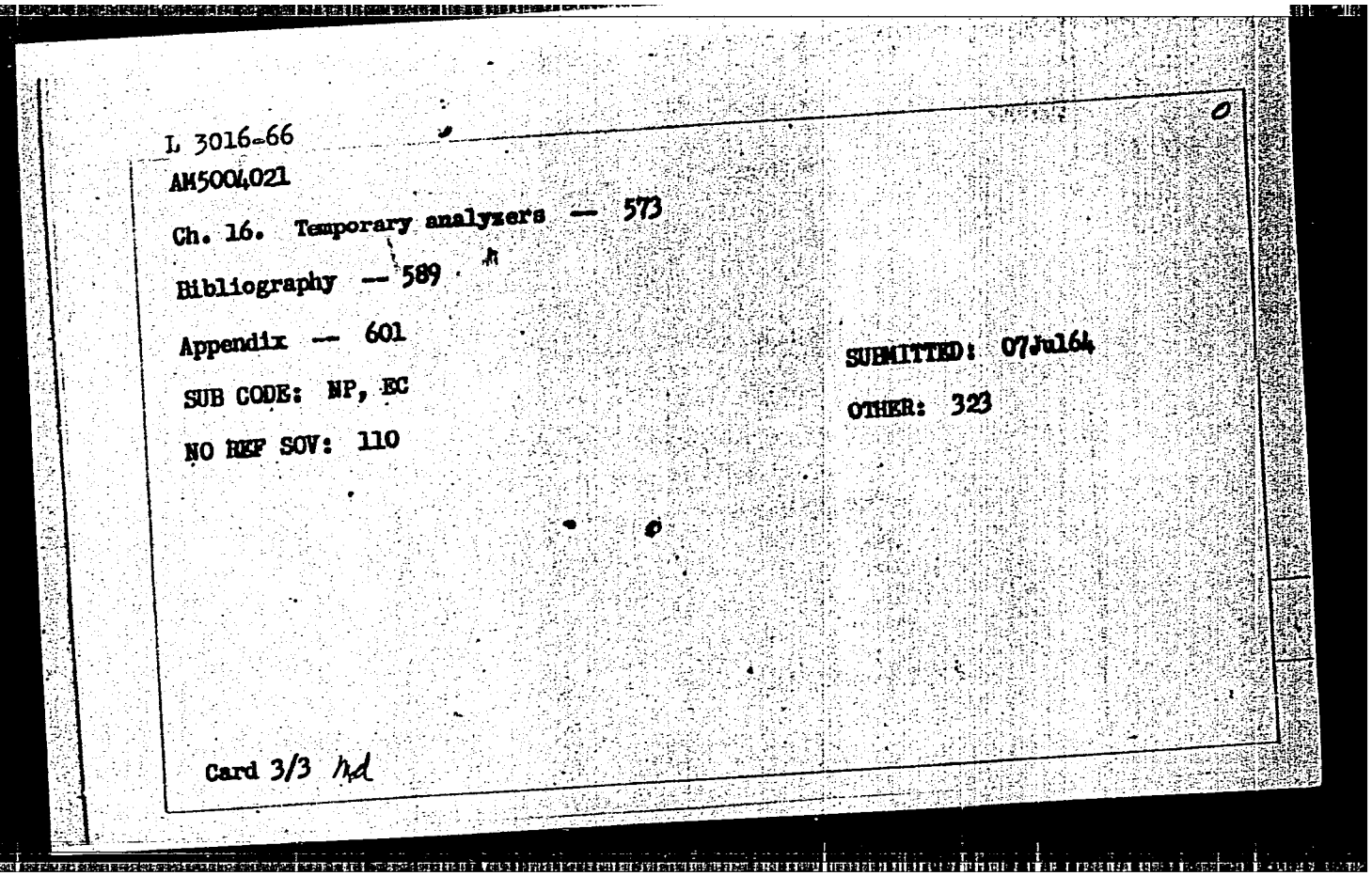

L 3016-66
AM5004021

Ch. 16. Temporary analyzers — 573

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SUB CODE: NP, EC

NO REF SOV: 110

SUBMITTED: 07Jul64

OTHER: 323

Card 3/3 hd

L 14598-65 EWT(m) DIAAP/ASD(a)-5/ASD(p)-3/SSD(c)/AFMDC/BSD/SSD/AFWL/AEDC(a)

ACCESSION NR: AP4044680 S/0120/64/000/004/0119/0121

AUTHOR: Sanin, A. A.; Mineyev, Yu. V.; Yakovlev, B. M. 19 B

TITLE: Scheme for recording gamma-quanta of various energies in the presence of strong streams of charged particles

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 119-121

TOPIC TAGS: gamma quantum, gamma quantum recording, charged particle, charged particle motion

ABSTRACT: A well-known principle of the segregation of pulses due to gamma-quanta and to charged particles by means of a double-layer scintillation counter is used. Tunnel-diode-type threshold devices are employed for discrimination purposes; the GaAs tunnel diodes have a low operation threshold (which obviates preamplifiers) stable within 1—2% at temperatures -20+45C. Multiplier photo-tube signals are picked off (see Enclosure 1) from the anode and from the last

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L 19598-65
ACCESSION NR: AP4044680

dynode. If a charged particle passes the scintillator, the dynode signal, after the fast component has been isolated by the impulse transformer, has a high enough amplitude to operate the discriminator. The anode signal is applied, via an emitter repeater and a delay line, to a series of stepped-threshold discriminators. Each discriminator sends its impulse through an anti-coincidence device whose other input receives an impulse from the fast-component discriminator. Thus, when a charged particle passes the double-layer scintillator, a discriminator operates and no signal appears at the output of the anti-coincidence devices. With gamma-radiation, however, the discriminator does not operate. Depending on the gamma-quantum energy, one or more discriminators operate and cause signals at the output. Orig. art. has: 2 figures.

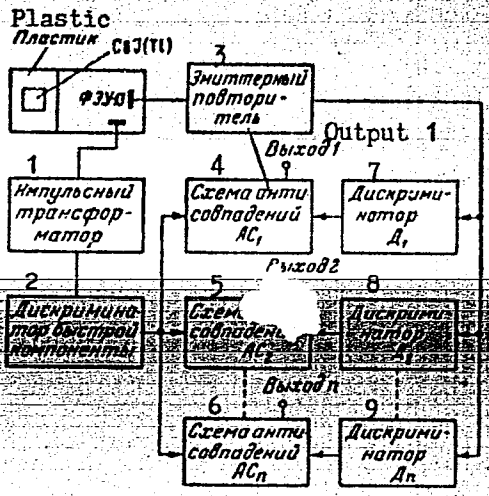
ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific-Research Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 20Jul63 ENCL: 01
SUB CODE: NP NO REF SOV: 001 OTHER: 002

L 19598-65

ACCESSION NR: AP4044680

ENCLOSURE: 01



A block diagram of the gamma-quanta recorder

1 - impulse transformer
2 - fast-component discriminator
3 - emitter repeater
4 - 5 - 6 - anti-coincidence circuits
7 - 8 - 9 - discriminators

Card 3/3

L 1728-66 FSS-2/EWT(1)/EEC(m)/FS(v)-3 TT/GW

ACCESSION NR: AP5021009 UR/0203/65/005/004/0781/0783
550.38

AUTHOR: Mineyev, Yu. V.; Sanin, A. A.; Savin, B. I.; Gadalov, A. N.

TITLE: System for measuring weak currents used on the Electron-2 and Electron-4 satellites

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 781-783

TOPIC TAGS: particle detector, detection system / Electron 2, Electron 4

ABSTRACT: A circuit used for the detection of currents caused by low-energy charged particles is described. The block diagram of the circuit is shown in Fig. 1 of Enclosure. The circuit operates as follows: The impinging particles are stored on the collector for approximately 120 sec at which time, a RP-5 polarized relay closes the contact on command and connects the charged capacitor C to the rest of the circuit. Damped oscillations with a natural frequency of approximately 70 kc are established in the circuit. The waveform is amplified in a nonlinear amplifier and applied to a threshold circuit (Schmidt trigger). Depending on the initial charge stored on C and the threshold level, the number of pulses at the output are directly proportional to the particle current. Accuracy is controlled by the periodic discharge of a reference capacitor previously charged from the power supply.

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L 1728-66

ACCESSION NR: AP5021009

2

The circuit is temperature stabilized; the number of recorded impinging particles does not vary by more than ±1 in the temperature range of -25 to + 45C. The minimum detectable current is 2×10^{-15} amp when the capacitor is charged for 100 sec. The dynamic range of the detector is 10^3. During the charging period, the active circuits are disconnected from the power source. This reduces the power consumption of the circuit to 0.2 w. Orig. art. has: 3 figures and 1 formula. [BD]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet. Institut yadernoy fiziki (Moscow State University. Institute of Nuclear Physics)

55

SUBMITTED: 22Oct64 ENCL: 01 SUB CODE: EC

NO REF SOV: 002 OTHER: 000 ATD PRESS: 4096

Card 2/3

L 1728-66

ACCESSION NR: AP5021009

ENCLOSURE: 01

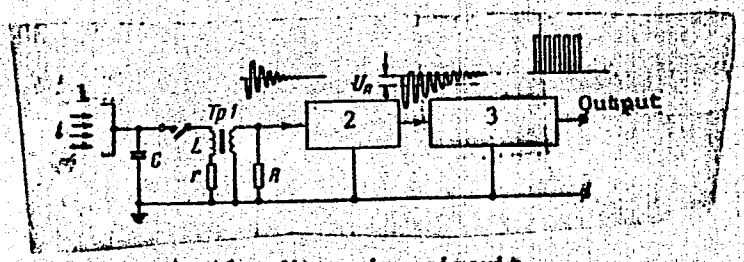

Fig. 1. Measuring circuit

1 - Collector; 2 - amplifier;
3 - discriminator.

Card 3/3

SANIN, A.G.

Demonstation of new equipment. Izobr. v SSSR 1 no.1:16-22 Jl '56.
(MLRA 10:3)

(Exhibitions)

SANIN, A. I.

SANIN, A. I. --"Methodology of Teaching the Section "Ordinary Differential Equations" in the Technical College Course of Higher Mathematics."*(Dissertations for Degrees in Science and Engineering Defended at USSR, Higher Educational Institutions) Kiev State U imeni T. G. Shevchenko, L'vov, 1955

SO: Knizhnaya Letopis' No. 34, 20 August 1955

* For the Degree of Candidate in Pedagogical Sciences

SANIN, B.P.

Characteristics of the localization of ore bodies in the Savinskoye No. 5 deposit (eastern Transbaikalia). Izv.vys.ucheb.zav.; geol. i razv. 4 no.11:61-67 N '61. (MIRA 15:2)

1. Chitinskoye geologicheskoye upravleniye.
(Transbaikalia--Ore deposits)

LOBANOVA, G.M.; SANIN, B.P.

Geology and composition of ores of the Savinskoye No.5 deposit.
Trudy IGEM no.83:141-160 '63. (MIRA 16:11)

SANIN, B.P.; KUKLIN, A.D. [deceased]

Characteristics of the distribution and relation with complex metals of the fluorite mineralization in one of the fields of eastern Transbaikalia. Izv.vys.ucheb.zav.; geol.i razv 5 no.6:79-84 Je '62. (MIRA 15:7)

1. Nerchinskoye rudoupravleniye Chitinskogo sovnarkhoza.
(Transbaikalia—Fluorite)

SANIN, B.P.; SVIRSKIY, M.A.

Methods of prospecting for lead-zinc deposits in eastern Transbaikalia. Trudy IGEM no.83:630-638 '63. (MIRA 16:11)

SANIN, B.P.; CHUMACHENKO, N.M.

Effect of joint tectonics on the localization of ore bodies and its role in the formation of the Savinskoye No.5 deposit. Izv.vys.ucheb.zav.; geol.i razv. 8 no.11:64-73 N '65.
(MIRA 18:12)

1. Nerchinskoye rudoupravleniye i Institut geokhimii g. Irkutsk.

BOGATSKIY, V.V.; FEDORCHUK, V.P.; OZEROVA, N.A.; BRYZGALOV, N.A.; GLADKOV, V.G.; NAMOLOV, V.A.; SANIN, B.P.

Reviews and bibliography. Geol. rud. mestorozh. 7 no.1:113-123 Ja-F '65. (MIRA 18:4)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent, i Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva (for Fedorchuk, Ozerova).

GLADKOV, V.G.; NAMOLOV, V.A.; SANIN, B.P.

Mechanization of mine prospecting in the Nerchinsk Ore Mining Administration. Razved. i okh. nedr 30 no.9:55-56 S '64.
(MIRA 17:12)

1. Irkutskiy nauchno-issledovatel'skiy institut redkikh metallov (for Gladkov, Namolov). 2. Nerchinskoye rudoupravleniye (for Sanin).

9,9810

25946
S/141/61/004/001/006/022
E133/E435

AUTHORS: Braude, S.Ya., Ostrovskiy, I.Ye. and Sanin, F.S.

TITLE: The use of the concept of a negative equivalent Earth's radius in estimating the intensive refraction of radio waves

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol.4, No.1, pp.67-73

TEXT: S.Ya.Brande, I.Ye.Ostrovskiy and F.S.Sanin are among various authors who have considered the propagation of radio waves between two points on the Earth which are at heights above the surface large compared with the wavelength. The field at the receiver, due to the transmitter, can be considered simply as a reflection problem in geometrical optics, so long as refraction and curvature of the Earth's surface are allowed for. This can be done by replacing the actual radius of the Earth a by an "equivalent" radius ae. The effect is as if reduced heights of transmitter and receiver were used which reduced the problem to one with a plane boundary. The geometry of the problem is shown in Fig.1 (where A is the transmitter, B the receiver and the wave from A to B is

Card 1/6

The use of the concept ...

reflected at C). M.P.Dolukhanov has shown (Ref.4: Propagation of radiowaves, Rasprostraneniye radiovoln, Svyaz'izdat, M., 1951) that when the angle γ in Fig.1 tends to zero, the intensity of the reflected wave at the receiver is given by

$$E = \frac{346\sqrt{P_{kam}D}}{r_{km}}\left|\sin\left[\frac{2\pi h_1 h_2}{r\lambda}\left(1-\frac{r^2}{r_r^2}\right)^2\right]\right| \text{ мв} \cdot \text{м}^{-1}, \quad (4)$$

where

$$r_r = \sqrt{2a_e}\left(\sqrt{h_1}+\sqrt{h_2}\right) \quad (5)$$

V.A.Fok has shown that the concept of an equivalent radius can be used in diffraction formulae too, despite the formal comparison with geometrical optics, but only if the parameter δ is small

$$\delta = \frac{\lambda^{2/3}}{2h_0}\left(\frac{a_e}{\pi^2}\right)^{1/3}$$

h_o representing the height at which the gradient of the

The use of the concept ...

refractive index changes considerably. The author now introduces the idea of a negative equivalent Earth radius, pointing out that this will become necessary when the gradient of the refractive index $dn/dh < 1.57 \times 10^{-7}\ m^{-1}$ for a sufficiently thick layer of the atmosphere. (The equivalent radius tends to infinity when $dn/dh = -1.57 \times 10^{-7}\ m^{-1}$.) Relationships analogous to those used for a positive equivalent radius can now be established. In particular, the variation of the negative equivalent radius with the height above the surface of a given interference maximum can be worked out (assuming a particular wavelength and transmitter height). Thus Fig.3 shows the variation in height of the third interference maximum for a wavelength of 3.2 cm and a transmitter height (h_1) = 18 m and for distances between the transmitter and receiver (r) = 6, 12, 18 and 24 km. Using the data from this and similar graphs, Fig.4 was constructed. This shows the height of the third interference maximum as a function of r and of the equivalent Earth radius (for both positive and negative values). These curves can be used to find the maximum reception distance of a transmitter. The equation actually employed gives the ratio r/r_c, where r is the

Card 3/ 6

The use of the concept ...

actual maximum distance of reception and r_c is the maximum distance under standard conditions. Table 1 gives values of this ratio for various values of the negative equivalent Earth radius. The last value in the table represents the maximum possible range. The major limitation on the use of a negative equivalent Earth radius is the assumption of a constant gradient of the refractive index. There are 4 figures, 1 table and 5 Soviet-bloc references.

ASSOCIATION: Institut radiofiziki i elektroniki AS UkrSSR
(Institute of Radiophysics and Electronics AS UkrSSR)

SUBMITTED: June 10, 1960

Table 1.

h_1 (м)	h_2 (м)	r_c/r_{rc}	$a_э$ (км)	r_c (км)	r (км)	r/r_c	ζ
18	6	0,8	—600 000	21,9	53,6	2,45	0,2
"	"	"	—100 000	"	140	6,4	0,6
"	"	"	— 80 000	"	165	7,5	0,8
"	"	"	— 65 000	"	174	7,9	1

Card 4/6

87880

15.8114

S/191/60/000/005/006/020
B004/B064

AUTHORS: Kamenskiy, I. V., Sanin, I. K., Itinskiy, V. I., Krylova, G. D.

TITLE: Polymers on the Basis of Reaction Products of Furfurole With Diacetone Alcohol and Boron-containing Ester of Diacetone Alcohol

PERIODICAL: Plasticheskiye massy, 1960, No. 5, pp. 15 - 17

TEXT: The authors proceed from joint investigations of the MKhTI im. Mendeleyeva (Moscow Institute of Chemical Technology imeni Mendeleyev) and NIIPM (Scientific Research Institute of Plastics) which showed (Refs. 5, 6) that the reaction of furfurole with compounds containing ketone groups yields monomers which are transformed into heat-resistant polymers under the action of heat. This investigation aims at studying the effect of the presence of boron upon the heat resistance of these polymers. First, the condensation of furfurole with diacetone alcohol is described. The molar ratio of the two components was 1:1, and condensation was conducted in the presence of 2 % NaOH as catalyst. The yield in resin was 65 - 70 %. When heated to 200°C without hardener, the resin became

Card 1/2

87880

Polymers on the Basis of Reaction Products of Furfurole With Diacetone Alcohol and Boron-containing Ester of Diacetone Alcohol

S/191/60/000/005/006/020
B004/B064

insoluble and unmeltable after 23 minutes. Instantaneous hardening occurred in the presence of 3 % benzene sulfonic acid. The coke number was 64 - 65 %, the heat resistance according to Zhurkov, 250°C. Moreover, the boric acid ester of diacetone alcohol was produced from diacetone alcohol and boric acid tributyl ester (molar ratio 3 : 1), fractionated in vacuo, and the fraction corresponding to the boron content of the boric acid ester (3.2 %) used for the reaction with furfurole. It took place: A) Dissolved in organic solvent, with 3 % NaOH, referred to furfurole, as a catalyst. No resin was formed after heating to 90 - 95°C for 24 hours. B) Without solvent, NaOH being the catalyst. A 10 - 11 hours' heating to 120°C yielded 65 - 70 % resin. C) Without solvent, the CBC (SBS) type cation exchanger being the catalyst. Heating to 120°C yielded already after 6 hours 65 - 70 % resin with a coke number of 69 %, and a heat resistance of up to 400°C. These polymers may be well combined with epoxy-, phenol formaldehyde-, or furfurole acetone resins. Thus, it is possible to raise the heat resistance of these resins. There are 1 figure, 4 tables, and 6 references: 2 Soviet, 3 US, and 1 British.

Card 2/2

34946
S/191/62/000/003/004/010
B101/B147

15.9170

AUTHORS: Kamenskiy, I. V., Sanin, I. K., Korshak, V. V.

TITLE: Polymers based on silicon-containing furan compounds. Synthesis of esters of furfuryl alcohol and ortho-silicic acid

PERIODICAL: Plasticheskiye massy, no. 3, 1962, 8-12

TEXT: (1) The synthesis of tetrafurfuryl oxysilane (I) in the presence of KOH by alcoholysis of tetraethoxy silane (TES) with furfuryl alcohol is described. To avoid resinification, the alcohol is first only mixed with half the TES, after evaporation of 20% of the theoretical C_2H_5OH amount with the next quarter, and after evaporation of 35% C_2H_5OH with the rest. The reaction is continued until evaporation of 75% C_2H_5OH at 115-140°C. The yield is 80-82%, the substance consists of yellowish crystals, m.p. 36-39°C, b.p. 204-206°C (4 mm Hg), d^{40} 1.231, n_D^{40} 1.5025. A by-product is the hitherto unknown ethoxy trifurfuryl oxysilane, a yellowish liquid, b.p.

Card 1/4

Polymers based on silicon- ...

152-154°C (1 mm Hg), d_4^{20} 1.1400, n_D^{20} 1.4890. (2) Synthesis of I by esterification of $SiCl_4$ with furfuryl alcohol. $SiCl_4$ is added dropwise to alcohol dissolved in benzene, excess pyridine is admixed as HCl acceptor. Pyridine hydrochloride was separated (a) by washing, dehydration of the benzene layer by $CaCl_2$, distillation of I in vacuo, or (b), with higher yields (94%), by filtering off the pyridine hydrochloride. (3) Synthesis of tetrahydrofurfuryl orthosilicate (II) by alcoholysis of TES with tetrahydrofurfuryl alcohol in the presence of lead monoxide at 120-145°C for 4 hrs. The product (75% yield) was a heavy, colorless liquid, b.p. 215-216°C (1.5 mm Hg), d_4^{20} 1.1399, n_D^{20} 1.4680. (4) Synthesis of II by esterification of $SiCl_4$, ratio $SiCl_4$: tetrahydrofurfuryl alcohol : pyridine = 1.1 : 4 : 4.8, 4 hrs at 10°C, 80% yield referred to alcohol. (5) Synthesis of ethyl furfuryl oxysilanes by alcoholysis, similar to (1), of ethyl triethoxy silane or diethyl diethoxy silane with furfuryl alcohol during 5 hrs. The product was ethyl trifurfuryl ethoxy silane (54.5%), b.p. 159.5-160°C (1 mm Hg), d_4^{20} 1.1743, n_D^{20} 1.4988; and diethyl difurfuryl

Polymers based on silicon ...

oxysilane (48%), b.p. 138-139°C (3 mm Hg), d_4^{20} 1.0835, n_D^{20} 1.4845. (6) Synthesis of alkyl(aryl)furfuryl oxysilanes by esterification of methyl, ethyl, or phenyl trichloro silane, dimethyl, diethyl dichloro silane, or trimethyl chloro silane with furfuryl alcohol, similar to (1). Products obtained: methyl trifurfuryl oxysilane (90%), b.p. 157-158°C (1 mm Hg), d_4^{20} 1.1801, n_D^{20} 1.4992; dimethyl difurfuryl oxysilane, b.p. 102-103 (1 mm Hg), d_4^{20} 1.1021, n_D^{20} 1.4809; trimethyl furfuryl oxysilane (89%), b.p. 39.0-39.5°C (1 mm Hg), d_4^{20} 0.9519, n_D^{20} 1.4449; ethyl trifurfuryl oxysilane (91%), b.p. 159.5-160°C, d_4^{20} 1.1743, n_D^{20} 1.4988; diethyl difurfuryl oxysilane (89%), b.p. 138-139°C (3 mm Hg), d_4^{20} 1.0835, n_D^{20} 1.4845; and phenyl trifurfuryl oxysilane (59%), b.p. 199.5-200°C, d_4^{20} 1.2040, n_D^{20} 1.5358. (7) Esterification of methyl chlorosilanes with tetrahydrofurfuryl alcohol produced (in 88-90% yields): methyl-tri-(tetrahydrofurfuryl)-oxysilane, b.p. 179-181°C (2 mm Hg), d_4^{20} 1.1068, n_D^{20} 1.4648;

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Polymers based on silicon ...

dimethyl-di-(tetrahydrofurfuryl)-oxysilane, b.p. 123-125°C (1 mm Hg), d_4^{20} 1.0324, n_D^{20} 1.4505; and trimethyl-(tetrahydrofurfuryl)-oxysilane, b.p. 172-173°C (760 mm Hg), d_4^{20} 0.9214, n_D^{20} 1.4271. The infrared spectra of the compounds are shown. Papers by Yu. K. Yur'yev (ZhOKh, 28, 3 (1958)) and A. L. Mdzhoyan (DAN ArmSSR, 27, 305 (1958)) are mentioned. There are 7 figures, 1 table, and 25 references: 8 Soviet and 17 non-Soviet. The four most recent references to English-language publications read as follows: H. Olson, Ind. Eng. Chem., 47, 1411 (1955); K. Q. Wilks, J. Am. Chem. Soc., 72, 1208 (1950); US Patent 2601497 (1952); US Patent 2569455, C. A., 46, 3084 (1952).

SUBMITTED: October 19, 1960

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L 22665-65 EPF(c)/EPR/EWG(j)/EWP(j)/EWT(m)/EWP(b)/T/EWP(e)/EWP(v) Pc-4/Pr-4/
Ps-4 RPL RM/WH/WW/MLK
ACCESSION NR: AT5002119 S/0000/64/000/000/0118/0122

AUTHOR: Sanin, I.K.; Kamenskiy, I.V.

TITLE: Synthesis and investigation of silicon-, boron-, and titanium-containing compounds of furan

SOURCE: AN SSSR. Institut neftekhimicheskogo sinteza. Sintez i svoystva monomerov (The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964, 118-122

TOPIC TAGS: furan derivative, silicon containing furan, boron containing furan, titanium containing furan, furfuryloxysilane, styrene copolymer, glue, methacrylate copolymer, vinylacetate copolymer, heteroorganic polymer

ABSTRACT: This investigation dealt with the preparation and application of furfuryloxysilanes. Cold- and hot-setting glue compositions based on tetrafurfuryloxysilane (TFS) have been developed. Graphite shapes cemented with such a composition had a rupture strength of 230 kg/cm^2, which decreased by 50% after firing at 1400-1500C. Hydrolysis of furfuryloxysilanes and reaction with maleic anhydride were also studied. Mixtures of TFS with styrene, methacrylate, and vinyl acetate in different proportions were polymerized in the presence of benzoyl peroxide at 80-160C. The mixtures did not become solid,

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ACCESSION NR: AT5002119

even after 300 hours; moreover, the viscosity increased with the TFS content. Polymerization of TFS, methyl-, and ethyltrifurfuryl-oxysilane in the presence of anionic catalysts such as $ZnCl_2$, $SnCl_4$, p-toluenesulfonic acid and others at 50-120C yielded monolithic polymers. Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 30Jul64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 014 OTHER: 008

Card 2/2

ACCESSION NR: AP4012187 S/0191/64/000/002/0025/0027

AUTHORS: Kamenskiy, I. V.; Sanin, I. K.; Komlev, V. K.

TITLE: Adhesive compositions based on furfuryl hydroxy silanes

SOURCE: Plasticheskiye massy*, no. 2, 1964, 25-27

TOPIC TAGS: furfuryl hydroxy silane, infusible polymer, insoluble polymer, cold hardening adhesive, gluing, durability of gluing, gelatinization time, dimethyl dichlorosilane, shearing strength

ABSTRACT: Synthesized furfuryl hydroxy silanes have exhibited the ability for 100% conversion into infusible and insoluble polymers in the presence of small quantities of ion type catalysts at low temperatures. This suggested them as cold hardening adhesives. Best results are attained with gluing of wood, graphite and various plastics; adhesion of the composition based on furfuryl hydroxy silanes to metallic surfaces is not high enough. Specified compositions were tested for durability of gluing of various plastics at normal temperatures and without pressure, leading to recommendations for adhesives for various non-metallic surfaces. Properties studied

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ACCESSION NR: AP4012187

were: dependence of gelatinization time on quantity of catalyst; dependence of gelatinization time on amount of dimethyl dichloro-silane; shearing strength of glued seams of foam plastic specimens; and change of durability of specimens during aging. Orig. art. has: 2 Tables and 5 Figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: MA NR REF SOV: 005 OTHER: 000

Card 2/2

L 34361-65 EPS(s)-2/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL WW/RM

ACCESSION NR: AP5008242 S/0286/65/000/005/0130/0130

AUTHOR: Sanin, I. K.; Korshak, V. V.; Kamenskiy, I. V.

TITLE: A method of copolymerization of furfuroxysilanes with unsaturated compounds. Class 39, No. 150626

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 130

TOPIC TAGS: copolymerization, substituted silane, polymer stability, insoluble polymer

ABSTRACT: This Author Certificate describes a method of copolymerization of furfuroxysilanes with unsaturated compounds. The method uses ionic catalysts designed to enhance the formation of thermosetting, insoluble polymers with high thermal stability. [VS]

ASSOCIATION: none

SUBMITTED: 19Sep61 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3211

Card 1/1

L 5296-66 EWT(m)/EPF(c)/EWP(j)/T RM
ACC NR: AP5025017 SOURCE CODE: UR/0286/65/000/016/0080/0080

AUTHORS: Prutkov, L. M.; Polikanin, N. A.; Kamenskiy, I. V.; Sanin, I. K.; Kutepov, D. F.; Korshak, V. V.

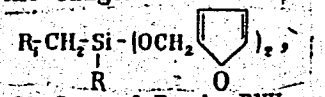
ORG: none

TITLE: A method for obtaining epoxy compositions. Class 39, No. 173926

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 80

TOPIC TAGS: epoxy, nitrogen, hardener, organosilicon, alkyl, aryl, aralkyl

ABSTRACT: This Author Certificate presents a method for obtaining epoxy compositions by applying, as a hardener, an oligomer based on nitrogen-containing organosilicon compounds. To increase the thermal stability of the hardened epoxy compositions, use is made of the oligomers based on aminoalkyldifurfuroloxysilane of the general formula:



where R is alkyl, aryl, or aralkyl, and R_1 is RNH or NH_2.

Card 1/2 UDC: 678.643.002.2:678.028.84

L 5296-66

ACCESSION NR: AP5025017

SUB CODE:MT,OC,GC/ SUB DATE: 17Aug64/ ORIG REF: 000/ OTH REF: 000

OC

Card 2/2

L 44294-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6011282 (A) SOURCE CODE: UR/0413/66/000/006/0159/0159

INVENTOR: Korshak, V. V.; Kamenskiy, I. V.; Sanin, I. K.

ORG: none

TITLE: Preparation of resin with furfurylhydroxysilanes. Class 39, No. 179882

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 159

TOPIC TAGS: resin, furfurylhydroxysilane, heat resistant polymer

ABSTRACT: This Author Certificate introduces a method for preparing furfurylhydroxysilane resins. To extend the variety of heat-resistant polymer materials with controlled viscosity, furfurylhydroxysilanes are heat-treated in the presence of peroxide-type initiators and ionic catalysts and then distilled by conventional methods. [LD]

SUB CODE: 11/ SUBM DATE: 19Sep61/

Card 1/1

ACC NR: AP6015625 (A) SOURCE CODE: UR/0413/66/000/009/0025/0025

INVENTOR: Prutkov, L. M.; Sanin, I. K.; Kamenskiy, I. V.; Kutepov, D. F.

ORG: none

TITLE: Method of obtaining alkyl(aryl)aminoalkyfurfurylhydroxysilanes. Class 12, No. 181106

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 25

TOPIC TAGS: silane, hydroxysilane, ethoxysilane

ABSTRACT: An Author Certificate has been issued for a method of obtaining alkyl(aryl)aminoalkylfurfurylhydroxysilanes. Alkyl(aryl)aminoethoxysilanes are treated with alcohols of the furan series upon heating. The heating is carried out at 60—150C. [Translation] [NT]

SUB CODE: 11/07/ SUBM DATE: 25Feb65/

Card 1/1 UDC: 547.419.5' 722.07

ZUBOV, M.F.; FEDOSEYENKO, L.G.; SANIN, M.A.; PIVOVAROVA, T.M.; ZIL'BERMINTS, I.V., kand. biolog. nauk; FADEYEV, Yu.N., kand. sel'skokhoz. nauk; ZHURAVLEVA, L.M.; KIPIANI, A.A., aspirant; MEL'NIKOV, N.N.; BOCHAROVA, L.P.; SHVETSOVA-SHILOVSKAYA, K.D.; SHAPOVALOV, G.K.; SPIRINA, T.A.; SEDYKH, A.S.; ZINCHENKO, V.A., aspirantka

From experiments in the use of new preparations. Zashch. rast. ot vred. i bol. 8 no.10:24-26 O '63. (MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy (for Zubov, Fedoseyenko, Sanin, Pivovarova). 2. Gruzinskiy institut zashchity rasteniy (for Kipiani). 3. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya im Timiryazeva (for Zinchenko).

MEL'NIKOV, N.N.; ZUBOV, M.F.; TRUNOV, P.N.; SANIN, M.A.; FEDOSEYENKO, L.G.; UKRAINETS, N.S.; PIVOVAROVA, T.M.

Fungicide for controlling powdery mildew fungi. Zashch. rast. ot vred. i bol. 8 no.1:31 Ja '63. (MIRA 16:5)
(Fungicides) (Mildew)

ZUBOV, M.F.; SANIN, M.A.; FEDOSEYENKO, L.G.; UKRAINETS, N.S.; PIVOVAROVA, T.M.; MATVIYEVSKIY, kand.biolog.nauk; ROSLAVTSEVA, S.A.

From practices in the use of poisonous chemicals. Zashch. rast. ot vred. i bol. 8 no.11:23-24 N '63. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy (for all, except Matviyevskiy). 2. Mlyevskaya opytnaya stantsiya sadovodstva im. L.P.Simirenko, Cherkasskaya obl., Gorodishche (for Matviyevskiy).

ZUBOV, M.F.; SANIN, M.A.; FEDOSEYENKO, L.G.; UKRAINETS, N.S.

Preparations of fungicidal effect. Zashch. rast. ot vred. i bol. 9 no.1:28 '64. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy.